General Biology

SEEKING SATISFACTION: EFFECT OF MULTIPLE MATING ON TIMING OF FERTILIZATION IN FEMALE GUPPIES (*POECILIA RETICULATA*), K. Hartley, A. Houde*, Lake Forest College, Lake Forest, Department of Biology, Lake Forest, IL. 60045, hartlkr@lfc.edu

Polyandry, a system in which females mate with more than one male in a single reproductive cycle, occurs frequently throughout the animal world. The benefits of multiple mating presumably outweigh the consequences, since it does occur repeatedly in nature. Our study organism, the guppy (*Poecilia reticulata*), exhibits polyandry as its mating system. Our study sought to explain why the gestation period is shortened when females are mated with more than one male relative to when they are mated to only one male. Thirty female guppies were given access to one male over four days and thirty were given access to four males over four days. After eight days the females were euthanized and the embryos were examined. Our preliminary results show that fertilization was delayed when females mated singly relative to when they were mated multiply. Among singly mated females, those mated to males with more orange coloration showed greater development of embryos. This experiment is now being repeated. We conducted a modified version of this experiment in which females were observed interacting and mating with males for the first 30 minutes in order to rule out the possibility that females whose clutches showed no development simply had not mated. Even when observed to copulate, a significant fraction of females showed no development after 12 days but in this version of the experiment, there was no difference in timing of fertilization between singly or multiply mated females. In conclusion we found that multiply mated females have a shorter developmental period than single mated females.

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